

WHAT IS CLAIMED IS:

1. A method for manufacturing a semiconductor device, comprising:

an insulating film pattern formation step of forming, on a semiconductor substrate, an insulating film pattern with an aperture at an impurity introduction region for introducing impurities into the semiconductor substrate and an aperture at a positioning mark region for adjusting a position of a photomask with respect to the semiconductor substrate;

a first photosensitive pattern formation step of forming, on the insulating film pattern, a first photosensitive pattern with an aperture that exposes the positioning mark region, the first photosensitive pattern covering the impurity introduction region;

a level difference formation step of forming, at the positioning mark region in the semiconductor substrate, a level difference for adjusting the position of the photomask at the aperture formed in the insulating film pattern;

after the level difference formation step, a first photosensitive pattern removal step of removing the first photosensitive pattern; and

after the first photosensitive pattern removal step, an impurity introduction step of introducing the impurities through the aperture formed in the insulating film pattern into the impurity introduction region.

2. The method for manufacturing a semiconductor device according to claim 1, wherein the insulating film pattern formation step comprises:

a step of forming a first insulating film and a second insulating film, in that order, on the semiconductor substrate;

a step of forming, on the second insulating film, a second photosensitive pattern having apertures at the impurity introduction region and the positioning mark region; and

a step of forming the insulating film pattern by etching the second insulating film with the second photosensitive pattern as a mask.

3. A method for manufacturing a semiconductor device, comprising:

an insulating film pattern formation step of forming, on a semiconductor substrate, an insulating film pattern with an aperture at an impurity introduction region for introducing impurities into the

semiconductor substrate and an aperture at a positioning mark region for adjusting a position of a photomask with respect to the semiconductor substrate;

5 an impurity introduction step of introducing the impurities through the apertures formed in the insulating film pattern into the impurity introduction region;

10 after the impurity introduction step, a first photosensitive pattern formation step of forming, on the insulating film pattern, a first photosensitive pattern with an aperture that exposes the positioning mark region, the first photosensitive pattern covering the impurity introduction region;

15 after the first photosensitive pattern formation step, a level difference formation step of forming, at the positioning mark region in the semiconductor substrate, a level difference for adjusting a position of the photomask at the aperture formed in the insulating film pattern; and

after the level difference formation step, a first photosensitive pattern removal step of removing the first photosensitive pattern.

4. A method for manufacturing a semiconductor device, comprising:
20 an insulating film pattern formation step of forming, on a semiconductor substrate, an insulating film pattern with an aperture at an impurity introduction region for introducing impurities into the semiconductor substrate and an aperture at a positioning mark region for adjusting a position of a photomask with respect to the semiconductor
25 substrate;

a level difference formation step of forming, by thermal oxidation of the semiconductor substrate at the positioning mark region, a level difference for adjusting a position of the photomask at the apertures formed in the insulating film pattern;

30 after the level difference formation step, an impurity introduction step of introducing the impurities through the apertures formed in the insulating film pattern into the impurity introduction region.

5. A method for manufacturing a semiconductor device, comprising:
35 an inter-element separation field oxide film forming step of forming an inter-element separation field oxide film in a predetermined region of a semiconductor substrate;

an insulating film pattern formation step of forming, on the semiconductor substrate and the inter-element separation field oxide film, an insulating film pattern with an aperture at an impurity introduction region for introducing impurities into the semiconductor substrate and an aperture at a positioning mark region for adjusting a position of a photomask with respect to the semiconductor substrate;

a level difference formation step of forming, at the positioning mark region in the inter-element separation field oxide film, a level difference for adjusting a position of the photomask at the apertures formed in the insulating film pattern; and

an impurity introduction step of introducing the impurities through the apertures formed in the insulating film pattern into the impurity introduction region.